

CLAIMS

What is claimed is:

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- 1 1. A method comprising:
2 electrically connecting a first kicker device to a first drain bias for a first
3 non-volatile memory cell, wherein said first kicker device comprises a
4 high performance transistor;
5 enabling said first kicker device; and
6 pulling a voltage of said first drain bias towards a voltage potential of a supply
7 source.
 - 1 2. The method of claim 1, wherein said first non-volatile memory cell is a flash
2 memory cell.
 - 1 3. The method of claim 1, wherein said high performance transistor is a p-channel
2 semiconductor device.
 - 1 4. The method of claim 1, wherein said first kicker device is enabled prior to sensing
2 the contents of said first non-volatile memory cell.
 - 1 5. The method of claim 1, wherein:
2 said first non-volatile memory cell is included in a data array;
3 a second kicker device is electrically connected to a second drain bias for a
4 second non-volatile memory cell;
5 said second non-volatile memory cell is included in a reference array; and

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6 said first kicker device and said second kicker device pull a voltage of a sense
7 node for said first non-volatile memory cell and a voltage of a reference
8 node for said second non-volatile memory cell towards the same voltage
9 potential.

1 6. The method of claim 1, wherein said first drain bias comprises a cascode
2 amplifier.

1 7. A kicker for a non-volatile memory drain bias circuit, comprising:
2 a high performance transistor, wherein a first terminal of said high performance
3 transistor receives a voltage from a supply voltage and a second terminal
4 of said high performance transistor provides a voltage to said non-volatile
5 memory drain bias circuit; and
6 an enable signal, wherein said enable signal activates said high performance
7 transistor.

1 8. The kicker for a non-volatile memory drain bias circuit of claim 7, wherein said
2 non-volatile memory drain bias circuit provides the drain bias for a flash memory
3 cell.

1 9. The kicker for a non-volatile memory drain bias circuit of claim 7, wherein said
2 high performance transistor is a p-channel semiconductor device.

1 10. The kicker for a non-volatile memory drain bias circuit of claim 7, wherein said
2 kicker pulls the voltage of a node towards the voltage potential of a supply source.

- 1 11. The kicker for a non-volatile memory drain bias circuit of claim 7, wherein said
2 kicker is enabled prior to sensing the contents of a first non-volatile memory cell.
- 1 12. The kicker for a non-volatile memory drain bias circuit of claim 11, wherein:
2 said first non-volatile memory cell is included in a data array;
3 a second kicker is electrically connected to a second drain bias for a second
4 non-volatile memory cell;
5 said second non-volatile memory cell is included in a reference array; and
6 said kickers pull a sense node for said first non-volatile memory cell and a
7 reference node for said second non-volatile memory cell towards the same
8 voltage potential.
- 1 13. The kicker for a non-volatile memory drain bias circuit of claim 7, wherein said
2 non-volatile memory drain bias circuit comprises a cascode amplifier.
- 1 14. A non-volatile memory device, comprising:
2 a first drain bias circuit for a first memory cell;
3 a first kicker circuit for said first drain bias circuit, wherein said first kicker circuit
4 comprises a high performance transistor and wherein said first kicker
5 circuit pulls the voltage of a node towards a voltage potential of a supply
6 source.
- 1 15. The non-volatile memory device of claim 14, wherein said non-volatile memory
2 device is a flash memory device.

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- 1 16. The non-volatile memory device of claim 14, wherein said high performance
2 transistor is a p-channel device.
- 1 17. The non-volatile memory device of claim 14, wherein said first kicker circuit acts
2 as a low resistance path to said supply voltage and said first kicker circuit charges
3 the bitline for said first memory cell.
- 1 18. The non-volatile memory device of claim 14, wherein said first kicker circuit is
2 enabled prior to sensing the contents of said first memory cell.
- 1 19. The non-volatile memory device of claim 14, further comprising:
2 a second drain bias circuit for a second memory cell; and
3 a second kicker circuit for said second drain bias circuit, wherein:
4 said first memory cell is included in a data array;
5 said second memory cell is included in a reference array; and
6 said first kicker circuit and said second kicker circuit pull a sense node for
7 said first memory cell and a reference node for said second
8 memory cell towards the same voltage potential.
- 1 20. The non-volatile memory device of claim 14, wherein said first drain bias circuit
2 comprises a cascode amplifier.

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